

## ADDITIONAL INFORMATION PERTAINING TO EPILEPSY

1. Epilepsy is defined as recurrent seizures.
2. Seizure - an electrical storm in the brain, which disrupts normal electrical brain activity.
3. Partial seizures - seizures which begin in one spot in the brain and may or may not spread.
  - (1) Simple partial seizures: seizures which begin in one spot in the brain and do not spread to involve other areas of the brain. There is no loss of consciousness, and little or no break in contact with the environment.

Examples: (i) Simple partial seizure with motor symptoms - clonic jerking of a hand caused by focal seizure activity in the opposite side brain motor cortex.

(ii) Simple partial seizure with intrapsychic symptoms - any seizure aura, including déjà vu, forced memory, inappropriate emotional tone such as unreasonable fear, etc.

- (2) Complex partial seizures: seizures which begin in one spot in the brain (usually a temporal or frontal lobe location) and spread to the opposite side in the same area but do not involve the whole brain. There is loss of self-awareness and loss of normal awareness of the environment but no convulsion. This type of seizure is typically followed by a period of drowsiness or confusion.
  - (3) Secondly generalized seizures: seizures which start in one spot in the brain, then spread to involve the entire brain, producing a convulsion. (Convulsion = major motor seizure = generalized tonic-clonic seizure = grand mal seizure)
4. Primary-generalized seizures - seizures which begin with bilateral symmetry on both sides of the brain. These may be of several types. Most are inherited. They may be:
  - (a) convulsive (major motor = generalized tonic-clonic = grand mal); or
  - (b) absence (petit mal).

True petit mal seizures usually begin in childhood. They are brief, lasting seconds only, but may occur up to hundreds of times in a day. There is no state of fatigue or confusion afterward, just a brief lapse of behavior-attention-awareness during the actual seizure.

5. Syncope - fainting or loss of consciousness produced by failure of adequate delivery of blood to the brain, usually caused by:
  - (1) vascular abnormalities:
    - (i) vasodilatation, as with sudden emotional shock, or with prolonged standing. This is a transient effect.
    - (ii) abnormal vascular capacitance, wherein blood vessels do not constrict as they should to keep blood up in the head. This may occur with diabetes, or with a number of less common conditions including autonomic peripheral neuropathies attributable to conditions other than diabetes, and conditions producing central autonomic failure, such as Multiple System Atrophies.
  - (2) cardiac abnormalities:

- (1) rhythm disturbances, either too slow (less than 40 beats per minute or heart block with periods of asystole) or too fast (greater than 150 beats per minute) a rhythm.
- (2) structural abnormalities of the heart valves or chambers, which interfere with the effective pumping action of the heart.

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Proper terminology/descriptors should be used wherever possible when providing information to the DLD. Use of such terms as Ablackouts®, Afalling out® or Aspells® is vague and ambiguous.

Persons with:

- primary-generalized major motor seizures,
- secondarily-generalized major motor seizures,
- complex partial seizures, and
- absence seizures

are all potentially unsafe to operate motor vehicles, unless seizures are controlled by medication or some other recognized-effective treatment. Other recognized-effective treatments might include: Aepilepsy surgery® and vagal nerve stimulation. Homeopathic medicine and other Alternative Medicine approaches, including psycho social-behavioral medicine approaches, used along and without recognized-effective treatments, are not acceptable.

Persons with ONLY simple partial seizures, who never have any interruption of alertness and who remain always in physical control of themselves, are safe to operate motor vehicles.

ASymptomatic® seizures are primary-generalized major motor seizures which are wholly and sufficiently explained by circumstances known to be capable of producing sudden and profound brain irritability. Examples would include sudden high fever to 106°F, insulin overdose, ingestion of stimulant drugs or withdrawal of sedative drugs. Persons with this type of seizure do not have epilepsy, and are probably safe to drive, as long as the seizure-causing condition(s) is unlikely to recur. Emotional stress, sleep deprivation, minor infectious illnesses or the fasting state are NOT sufficient explanations for the occurrence of a seizure, though such may act as Atriggers® for seizures in predisposed persons.

6. A healthcare professional should be aware of the following information in order to properly profile an individual case and in case of an appeal to the Driver License Medical Advisory Board, this information must be provided to the Driver License Division for review.

- (1) Original medical history and physical examination records pertinent to the seizure disorder, preferably from the specialist physician (usually a neurologist) or other primary treating physician. Records of neurologic consultation, if available, should be provided.
- (2) Report of cranial imaging studies (brain CT or MRI), if done.
- (3) Report of EEG, if done.

- (4) Name(s), dose(s), frequency of administration of medication taken to control seizures, and any side effects experienced by the patient.
- (5) Serum levels of medication taken for seizures (most recent).
- (6) Dates of last three (3) seizures.
- (7) Description of what happens during a typical seizure. Patients may have more than one type of seizure, and if so, should describe the features of each type. Descriptions may include their own perceptions and the observations of witnesses.